CLAIMS

1. A substrate for ink jet comprising:

a base plate formed with a heat-generating resistor for generating energy for discharging ink;

an electrode wiring electrically connected with said heat-generating resistor; and

an upper protective layer provided above said heat-generating resistor and said electrode wiring, and comprising a TaCr alloy, wherein said upper protective layer is formed with a construction made by resin on an upper portion thereof and said resin construction is fixed on said upper protective layer.

2. A substrate for ink jet according to claim 1, wherein said upper protective layer is constituted of a two-layered film formed by a lower layer of a TaCr alloy and an upper layer of Ta, and wherein said lower layer fixes a liquid flow path member as said resin construction and said upper layer is provided at a position contact with ink at least above said heat-generating resistor.

3. A substrate for ink jet according to claim 1, wherein said upper protective layer contains Cr in an amount equal to or higher than 12 atomic % (at.%).

4. A substrate for ink jet according to claim 1, wherein said upper protective layer has an amorphous structure.

5. A substrate for ink jet according to claim 1, wherein said upper protective layer has a thickness within a range of 50 to 500 nm.

6. A substrate for ink jet according to claim 1, wherein said upper protective layer has a thickness within a range of 10 to 100 nm.

7. A substrate for ink jet according to claim 1, wherein said upper protective layer has a film stress which is at least a compression stress and is equal to or less than 1.0×10^{10} dyn/cm^2.

8. An ink jet head comprising:

a discharge port for discharging a liquid;

a liquid flow path communicating with said discharge port and having a portion for applying thermal energy for discharging said liquid to said liquid;

a heat-generating resistor for generating said thermal energy;

an electrode wiring electrically connected with said heat-generating resistor; and

an upper protective layer provided above said heat-generating resistor and said electrode wiring, and comprising a TaCr alloy, wherein said upper protective layer is formed with a construction made by resin on an upper portion thereof and said resin construction is fixed on said upper protective layer.

9. An ink jet head according to claim 8, wherein said upper protective layer is constituted of a two-layered film formed by a lower layer of a TaCr alloy and an upper layer of Ta, and wherein said lower layer fixes a liquid flow path member as said resin construction and said upper layer is provided at a position contact with ink at least above said heat-generating resistor.

10. An ink jet head according to claim 8, wherein said upper protective layer contains Cr in an amount equal to or higher than 12 atomic % (at.%).

11. An ink jet head according to claim 8, wherein said upper protective layer has an amorphous structure.

12. An ink jet head according to claim 8, wherein said upper protective layer has a thickness

within a range of 50 to 500 nm.

13. An ink jet head according to claim 8, wherein said upper protective layer has a thickness within a range of 10 to 100 nm.

14. An ink jet head according to claim 8, wherein said upper protective layer has a film stress which is at least a compression stress and is equal to or less than 1.0×10^{10} dyn/cm^2.

15. A producing method for an ink jet head including, on a substrate, a heat-generating resistor constituting a heat generating portion, an electrode wiring electrically connected with said heat-generating resistor, an upper protective layer provided on said heat-generating resistor and said electrode wiring and having a contact surface with an ink, and a liquid flow path member formed by a resin layer on said substrate, comprising:

a step of forming an upper protective layer in which a Ta layer is laminated on a layer formed by a TaCr alloy;

a step of selectively patterning said Ta layer and selectively removing said Ta layer;

a step of forming the liquid flow path member in a portion where the layer formed by said TaCr

alloy is exposed by said removing.